UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,687	03/11/2005	Yoshiaki Okuno	1190-0603PUS1	7314

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EXAMINER
REDDING, THOMAS M

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
05/23/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

	Application No.	Applicant(s)
	10/527,687	OKUNO ET AL.
Office Action Summary	Examiner	Art Unit	
	THOMAS M. REDDING	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 February 2008_.
2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _20-33_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _20-33_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _11 March 2005_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Applicant's response received on 2/25/2008 is fully considered herein. Claims 20-

33 are currently pending.

Specification

2.   In response to applicant's amendment of the title, the objection of the title is

withdrawn.

        In response to applicant's amendment of the abstract to remove the drawing

symbols, the objection to the abstract is withdrawn.

Claim Objections

        In response to amendment of claim 28 changing "zoom ratio" to "conversion

ratio" to correct the problem of insufficient antecedent basis, the objection to claim 28 is

withdrawn.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 20-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Someya et al. (US 2002/0030690 A1 – referenced in IDS of 3/11/2005).

Regarding claim 20, Someya discloses [a]n image processing method, comprising:

detecting an edge width of an edge portion of input image data ("In these embodiments, the input row or column of pixels (FIGS. 25A and 26A) is divided into uniform segments (a) in which the brightness level does not change, and edges (b, c). The edges are further divided into first, second, and third parts, more specifically into leading and trailing segments (b) and interior segments (c). A leading or trailing segment (b) is defined to be a segment in which the rate of change of the brightness level is itself changing. An interior segment (c) is defined to be a segment in which the brightness level changes at a substantially constant rate", Someya, paragraph 209, Segments b and c define edge widths);

determining a localized conversion ratio based on the edge width and a ratio control amount, wherein the localized conversion ratio is localized to each one of at least three segments (Someya, figure 28 E and F, letter b corresponds to the leading and trailing edge segments and letter c corresponds to the center of the edge),

wherein said at least three segments include a leading edge segment, a control edge segment and a trailing edge segment, in which the ratio control amount is positive in the leading edge segment, positive in the trailing edge segment and negative in the

control edge segment of the edge portion ("The result of applying this equation is shown

in FIG. 28E. As described earlier, the zoom ratio hc4 is equal to n in the segments (a) of

uniform brightness level, is greater than n in the leading and trailing edge segments (b),

and is less than n in interior edge segments (c). The average value of hc4 over the

entire horizontal line is equal to n", Someya, paragraph 216, and figure 28 E and F); and

generating an output image by applying the localized conversion ratio to the input

image data to convert a number of pixels in the segment of the edge portion ("FIG. 28F

depicts expanded image data Po obtained by interpolation with this varying zoom ratio

hc4", Someya, paragraph 217).

Regarding claim 21, Someya discloses [t]he image processing method according

to claim 20, said determining step determining a different localized conversion ratio for

at least one segment of an edge portion of an image than for another segment of the

edge portion ("The result of applying this equation is shown in FIG. 28E. As described

earlier, the zoom ratio hc4 is equal to n in the segments (a) of uniform brightness level,

is greater than n in the leading and trailing edge segments (b), and is less than n in

interior edge segments (c). The average value of hc4 over the entire horizontal line is

equal to n", Someya, paragraph 216, and figure 28 E and F).

Regarding claim 22, Someya discloses [t]he image processing method according

to claim 20, said determining step determining a localized conversion ratio that is higher

for leading and trailing edge segments than for a non-edge segment (Someya,

paragraph 216, and figure 28 E and F).

Regarding claim 23, Someya discloses [t]he image processing method according

to claim 20, said determining step determining a localized conversion ratio that is lower

for a central edge segment than for a non- edge segment (Someya, paragraph 216, and

figure 28 E and F).

Regarding claim 24, Someya discloses [t]he image processing method according

to claim 20, wherein a total sum of localized conversion ratios for leading, central and

trailing edge segments is zero ("The average zoom ratio over the entire row or column

of pixels is equal to n", Someya, paragraph 210, the local conversion ratios cancel out

considered over an edge).

Regarding claim 25, [t]he image processing method according to claim 20, said

determining step variably controlling the localized conversion ratio depending upon a

control pattern determined on the basis of the edge portion ("The vertical high-frequency

information detector 46 receives input image data Pi from the memory 5 and detects

high spatial frequency information by performing operations that generate the first

derivative vd1 and third derivative vd3 of the image data in the vertical direction. The

vertical zoom ratio control unit 47 uses these derivatives vd1, vd3 to determine a

vertical zoom ratio vc4. The vertical interpolator 11 uses the vertical zoom ratio vc4 to

generate vertically zoomed image data Pv from the received image data Pi", Someya,

paragraph 212, Someya uses the derivatives of the input edge to control the zoom

ratio).

Regarding claim 26, Someya discloses [t]he image processing method according

to claim 20, said determining and applying steps determining and applying the localized

conversion ratio in a horizontal direction, vertical direction or both horizontal and vertical

directions ("Vertical zooming is performed in the same way as horizontal zooming. The

horizontal zoom ratio and vertical zoom ratio are mutually independent. The value of the

parameter k may also differ between the horizontal and vertical directions", Someya,

paragraph 223, Someya teaches horizontal and vertical scaling).

Regarding claim 27, Someya teaches [t]he image processing method according

to claim 26, wherein the localized conversion ratio for the horizontal direction is different

than the localized conversion ratio for the vertical direction ("Vertical zooming is

performed in the same way as horizontal zooming. The horizontal zoom ratio and

vertical zoom ratio are mutually independent. The value of the parameter k may also

differ between the horizontal and vertical directions", Someya, paragraph 223, Someya

teaches horizontal and vertical scaling).

Regarding claim 28, Someya teaches [t]he image processing method according

to claim 20, further comprising: specifying an amplitude of the localized zoom-

conversion ratio to adjust the edge width of the edge portion to a desired edge width

("$hc4 = n + (k \times hd1 \times hd3)$", Someya, paragraph 215, hc4 is the horizontal zoom ratio, n is

the base zoom ratio, and k is an arbitrary positive constant parameter. The amplitude of

the scale factor is controlled by the product of the 1st and 3rd derivatives of the edge).

Regarding claim 29, Someya discloses [t]he image processing method according

to claim 20, further comprising: detecting an edge reference position of the edge

portion;

said determining step determining the localized conversion ratio based on the

edge width and edge reference position ("$hc4 = n + (k \times hd1 \times hd3)$", Someya, paragraph

215, hc4 is the horizontal zoom ratio, n is the base zoom ratio, and k is an arbitrary

positive constant parameter. The amplitude of the scale factor is controlled by the

product of the 1st and 3rd derivatives of the edge which ties the conversion ratio at each

pixel to its relative position in the edge).

Regarding claim 30, Someya discloses [t]he image processing method according

to claim 20, further comprising: variably controlling a generation period of the localized

conversion ratio ("$hc4 = n + (k \times hd1 \times hd3)$", Someya, paragraph 215, hc4 is the

horizontal zoom ratio, n is the base zoom ratio, and k is an arbitrary positive constant

parameter. The amplitude of the scale factor is controlled by the product of the 1st and

3rd derivatives of the edge which ties the conversion ratio at each pixel to its relative

position in the edge. The zoom ratio is controlled based on the position within an edge

which defines the generation period).

Regarding claim 31, Someya discloses [t]he image processing method according

to claim 20, further comprising: variably controlling a maximum and/or minimum value of

the localized conversion ratio ("$hc4 = n + (k \times hd1 \times hd3)$", Someya, paragraph 215, hc4 is

the horizontal zoom ratio, n is the base zoom ratio, and k is an arbitrary positive

constant parameter. The amplitude of the scale factor, including the maximum and

minimum value, is controlled by the product of the 1st and 3rd derivatives of the edge).

Regarding claim 32, Someya discloses [t]he image processing method according

to claim 20, further comprising:

variably controlling a maximum value, minimum value, and/or generation period

of the localized conversion ratio based on the edge width ("$hc4 = n + (k \times hd1 \times hd3)$",

Someya, paragraph 215, hc4 is the horizontal zoom ratio, n is the base zoom ratio, and

k is an arbitrary positive constant parameter. The amplitude of the scale factor, including

the maximum and minimum value, is controlled by the product of the 1st and 3rd

derivatives of the edge which ties the conversion ratio at each pixel to its relative

position in the edge).

Regarding claim 33, Someya discloses [t]he image processing method according

to claim 20, further comprising: displaying the output image on a display device ("a

display unit that displays the output pixels", Someya, paragraph 23 and figure 46).

Response to Arguments

Summary of Applicant's Remarks: Regarding claim 20, Someya does not teach

the claim processing method specifically a ratio control amount that is positive for

leading and trailing edges and negative for the central edge.

Examiner's response: See updated rejection above.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to THOMAS M. REDDING whose telephone number is

(571)270-1579. The examiner can normally be reached on Mon - Fri 7:30 am - 5:00 pm

EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. M. R./
Examiner, Art Unit 2624

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624